DOCUMENT RESUME

ED 099 889 CS 201 775

AUTHOR Charrow, Veda R.
TITLE A Psycholinguistic Analysis of "Deaf English."
PUB DATE Sep 74
NOTE 26p.; Paper presented at the Annual Meeting of the American Psychological Association (82nd, New Orleans, August 30-September 3, 1974)

EDRS PRICE MF-$0.75 HC-$1.85 PLUS POSTAGE
DESCRIPTORS Deaf Children; *Deaf Education; *Deaf Research; *Educational Research; *Language Development; Linguistic Patterns; *Psycholinguistics

ABSTRACT

The purpose of this study was to identify and provide normative data for weighting of those nonstandard linguistic features that make up deaf English. Subjects were prelingually or congenitally deaf high school students from the California School for the Deaf and a control group of normal-hearing fourth graders from a California public school. Seven subjects were children of deaf parents and eight were children of hearing parents. The test consisted of 50 deaf English sentences produced by deaf teenagers and 50 standard English sentences which were equivalent in meaning to the deaf English sentences. Sentences were presented on a cathode-ray tube to each subject individually. When the sentence disappeared from the screen, the subjects were required to write it on an answer sheet as they remembered it. By analyzing the results of this test, it was concluded that there appears to be a variety of nonstandard English that deaf students use instead of standard English and that the deaf have learned many obligatory standard English grammatical and morphological rules, but they apply them optionally. The appendix lists all test items used in the study, and a bibliography is supplied. (TS)

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

© Veda R. Charrow 1974

ED 099682

A Psycholinguistic Analysis of "Deaf English"

PERMISSION TO REPRODUCE THIS COPYRIGHTED MATERIAL HAS BEEN GRANTED BY
Veda R. Charrow
TO ERIC AND ORGANIZATIONS OPERATING UNDER AGREEMENTS WITH THE NATIONAL INSTITUTE OF EDUCATION. FURTHER REPRODUCTION OUTSIDE THE ERIC SYSTEM REQUIRES PERMISSION OF THE COPYRIGHT OWNER.

Veda R. Charrow

Stanford University

The relationship between profound prelingual deafness and language processing ability is an area of interest to psycholinguistics, educational psychology and cognitive psychology.

Early studies by psycholinguists and educators of the deaf tended to show that the deaf were "language-deficient" or even "language-less" (Myklebust; Tervoort & Verbeck; Furth, 1966), since their English (or "native" language) competency was far below that of normal hearing persons, and since many deaf persons did not - and do not - have intelligible oral speech. Since the prelingually profoundly deaf person must be taught his societal language, over many years, researchers reasoned that the young deaf could serve as "languageless" controls in studies of the relation of language to cognitive development. This use of the deaf as languageless controls is a logical extension of the Sapir-Whorf hypothesis in linguistics, that the structure of one's language influences one's perception of reality: If the deaf are indeed languageless, they should be unable to conceptualize, solve problems or even think clearly. However, investigations of the conceptual abilities of the deaf (VanderWoude; Furth, 1971; ~~Furth~~ Youniss, Furth Youniss & Ross) have shown deaf subjects to be roughly equal to hearing subjects in tactical approaches to problems, and in their acquisition of logical structures. In short, these "languageless"

CS 301 775

deaf were found to be capable of propositional thought.

Although the results of these studies are interesting, the premise upon which they were based is unsound. The assumption underlying these studies is that the deaf can serve to prove whether persons without language can think as language users think. The experimenters did not take into account the possibility that the deaf may not be languageless, and that the absence of auditory-vocal language (as well as the need to be taught one's societal language) does not necessarily exclude all possibility of language knowledge. Only recently have researchers in the area of language and deafness considered the possibility that the sign language(s) of the deaf is a true language, with a syntax and vocabulary of its own. Investigations by Stokoe, Bellugi, Fischer, Battison, Frishberg, Woodward and others, have established the fact that American Sign Language (ASL or Ameslan), the first language of the approximately ten percent of the deaf who are children of deaf parents, is a complete and linguistically valid language. Furthermore, it is this author's contention that a deaf child of hearing parents, who does not have access to a standard sign language such as ASL, will, unless prevented or thwarted, develop an idiosyncratic gesture language of his own (cf. Hoemann). No deaf child is without a means of communication, although he may lack a knowledge of his societal spoken language or a standard sign language. The deaf child of hearing parents is languageless, only if one applies the strict definition of language, as a code shared by a linguistic community.

Nonetheless, because of the deaf child's inability to hear his societal language, and because of the differences in linguistic structure between any spoken language and any sign language (the different modalities adapt themselves to different kinds of grammatical structures - cf. Fischer, Woodward), the deaf child has great difficulty learning his societal language, even in non-oral form. Studies of the reading, writing and general educational performance of the deaf student (Goetzinger & Rousey; Miller; Boatner; McClure; Schulze; Dunagan) have shown the educational attainment of the deaf to be far below that of the hearing; most deaf students leave school as functional illiterates. Furthermore, the deaf were found to be retarded in their English language abilities, and made syntactical errors that the hearing do not make.

The inability of the profoundly prelingually deaf to hear their societal language, and the consequent inability to learn it spontaneously, the long years of English study at school, and finally the poor performance of deaf students in English writing skills and writing ability, led this writer to the conclusion that English is not the deaf person's native language. In an experiment to test this hypothesis, Charrow & Fletcher (1974, in press) administered the Test of English as a Foreign Language (TOEFL) to two groups of deaf students - deaf childern of hearing parents and deaf children of deaf parents. Results tended to uphold the hypothesis - that English is a foreign or second language for the deaf - and particularly for the deaf children of deaf parents. (This is understandable, since their first language is an established standard lang-

uage, ASL).

An interesting result of this test was the clustering of the deaf students' errors: most of the deaf in each group committed the same errors, and the same sorts of errors, in the multiple-choice test. This result corresponded to a phenomenon that most teachers of the deaf notice among their students - "deafisms" and commonality of errors. If the deaf tend to make the same sorts of errors in their English usage (such as omission or overgeneralization of articles, certain prepositions, tense markers and other inflections), then there are grounds to suggest that the deaf have a dialect of their own - a "Deaf English" - different from Standard English.

This Deaf English appears to become "frozen" or to "crystallize" (as pidgin languages do) sometime in the deaf students' teens. Its linguistic features may alternate with some Standard English features, and in this, and in its "simplification" of Standard English structures, it very much resembles pidginization. The range of grammatical forms - standard and non-standard - used by deaf students appears to parallel the "pidgin continuum" found in the speech of pidgin speakers. Until now, however, there has been very little investigation into the commonality of "deafisms", (Quigley; Wilbur), and no studies have approached the problem as a process of "languaging", of creating a non-standard dialect or pidgin, as opposed to erroneous usage.

The purpose of this study is to identify, and provide normative data for weighting of, those non-standard linguistic features

that make up Deaf English.

Method:

Subjects Subjects were profoundly prelingually or congenitally deaf high-school students from the California School for the Deaf in Berkeley, California. Seven were children of deaf parents; eight were children of hearing parents. The children of deaf parents had learned ASL in infancy, as their first language, while the children of hearing parents had learned ASL much later, in school, and used it with varying degrees of proficiency. Mean age of the subjects was 14.9 years. Average hearing loss was 85 dB in the better ear in the speech range; no subject had a hearing loss of less than 65 dB in the better ear, and most were "totally" deaf (a loss of over 115 dB). In addition, there was a hearing control group, controls for reading level (the mean reading grade-level of the deaf students was fourth grade). The control group consisted of nine 9- and 10-year-old normal-hearing fourth graders attending a Palo Alto, California school. All subjects and controls had I.Q.s in the average or slightly above-average range.

Test The test consisted of 50 "Deaf English" sentences, based on written sentences produced by deaf teen-agers, and 50 Standard English sentences which were equivalent in meaning to the Deaf English sentences. All the supposed Deaf English constructions were presented for validation to six teachers of the deaf; those items and grammatical constructions which a majority of the teachers felt were typical "deafisms" were incorporated into the test.

The sentences were presented on a TEC computer terminal cathode-ray tube for 6.5 seconds each, in random order, to each subject individually. When the sentence disappeared from the screen, the subject was required to write it on an answer sheet as he remembered it. When the subject was ready for the next sentence, he pressed one of the keyboard keys. Instructions for the test were presented in writing to all the subjects, and were further explained, orally to the hearing controls, in Signed English to the deaf subjects.

Analysis

The data were analyzed using a multivariate analysis of variance (for unequal N). Three aspects of the data were examined: (1) overall errors--i.e., the relative frequencies, for each group, of perfect sentences (or those with only trivial errors), omitted sentences, and and sentences with one or more serious errors. (2) Errors within sentences, i.e., in those sentences with one or more serious errors, the relative frequencies of each error Intensity for each group. (Error Intensities 3 and 6 were for serious grammatical errors or anomalies in Standard English; Intensities 4 and 5 were used for serious errors in the Deaf English sentences--4, for errors in the direction of Standard English, or "corrections", 5, for errors in the direction of less standard English). In this analysis, significant differences between the performances of the normal subjects (N), the deaf children of hearing parents (DH), and the deaf children of deaf parents (DD) in the DE and SE sentences could be discovered. (3) Errors within sentences in different parts of speech. Relative frequencies of 11 part-of-speech errors in the SE sentences were compared for the three groups,

BEST COPY AVAILABLE

to determine specific differences in English competence. Similarly, frequencies of 9 part-of-speech errors in the DE sentences were compared across groups.

The 11 parts of speech examined in the SE sentences were: Present Inflection, Past Tense Marker, Copula, Preposition, Present Participle, Past Participle, Definite Article, Indefinite Article, Plural, Mass and Future. The 9 parts of speech examined in the DE sentences were the same as the first 9 parts of speech examined in the SE sentences. Comparisons were also made between SE and DE for each of these 9 parts of speech within each group of subjects. This was done to determine whether there was any relationship for a given group between the number of errors made in SE and the number of errors made in DE for a given part of speech.

Results

It was hypothesized that if the Deaf English items were truly representative of Deaf English, the deaf subjects would make fewer errors in them than in the Standard English sentences; similarly, the hearing subjects would make more errors in the Deaf English sentences, as they were not part of their linguistic competence. It was also hypothesized that the deaf subjects would perform more poorly in the Standard English sentences than the hearing subjects.

From the overall analysis performed on the data, it was evident that Standard English was not the normal means of communication of the deaf subjects, regardless of parentage. They committed very many errors in SE--significantly more than normal children five years younger than themselves.

BEST COPY AVAILABLE

The results of the overall analysis of the DE sentences indicate that the deaf subjects found the DE sentences easier to remember and repeat than the normal subjects did. (Normals omitted significantly more DE sentences than the deaf). However, comparing the deaf subjects' results in SE and DE sentences (overall errors), it is evident that they found the DE sentences no easier than the SE sentences to recall and repeat correctly. Sentences in "Deaf English" did not "equalize the handicap" of the deaf subjects. It is apparent that certain aspects of the "Deaf English" used in this experiment are not part of the deaf subjects' linguistic competence.

The results of the second set of analyses (errors within sentence--Type and Intensity) confirm the finding of the overall analysis that the deaf subjects found the DE sentences no easier than SE sentences to recall and repeat. The normal subjects were shown to have made significantly fewer grammatical errors within the SE sentences than the deaf subjects, which reinforces the finding in the first set of analyses: the SE sentences do represent the linguistic competence of the normal subjects, but not of the deaf subjects. Within the DE sentences, there were no significant differences between the normals and the deaf either with regard to number of "corrections" (Intensity 4) or with regard to number of non-standard errors (Intensity 5). It was necessary to perform analyses within sentences on various parts of speech to see whether the normal and deaf subjects performed in precisely the same way on the DE sentences.

The results of the third set of analyses (errors within sentences--Parts-of-Speech) indicate that although overall scores for errors made inthe DE sentences were the same for the normal as for the deaf sub-

BEST COPY AVAILABLE

jects, there were significant differences between the normal and deaf subjects for errors and "corrections" in specific parts of speech. In DE, the normal subjects made significantly more "corrections" than the deaf subjects involving prepositions and past participles. There were also similarities and differences between the performances of each group in the relative frequency of non-standard DE errors (Intensity 5) versus "corrections" (Intensity 4). All 3 groups made significantly more "corrections" than errors for past-tense markers, plurals and indefinite articles. But only the normal group made significantly more "corrections" than errors involving prepositions and past participles.

Thus, it is apparent that the deaf subjects did not treat the DE sentences in the same way as the normal subjects did. (There were no significant differences between the performances of the two deaf groups).

The bulk of the errors made by the deaf subjects in both the SE and the DE sentences involved tense and aspect markers, copulas, plural markers, determiners, and prepositions. The deaf subjects often inserted these functors into the slots where they logically should have gone in the DE sentences, sometimes incorrectly. Interestingly, they very often omitted these same functors in the SE sentences (cf. Table 14). This seems to indicate that the deaf subjects have learned most, if not all, of these SE grammar rules, but can apply them only inconsistently, possibly as an afterthought. The deaf learn these rules in school as part of their grammar programs, but, possibly because the rules are acquired so late and there is so little feedback, obligatory SE rules become optional or variable where the deaf are concerned. From their performances in the DE sentences, it is evident that many of the deaf

BEST COPY AVAILABLE

subjects know rules of article insertion, plural marking, tense marking, and use of prepositions and copulas. But from their performance in the SE sentences, it also appears that those rules are not fully understood or assimilated. They do not seem to be part of the deaf subjects' competence.

Conclusion

In conclusion, there does indeed appear to be a variety of non-Standard English that the deaf subjects use instead of Standard English. The constructions chosen for the DE subtest of the experiment did not all seem to be representative of the actual variety of English used by the deaf subjects. Certain constructions were recalled without errors, and others were recalled incorrectly or not at all. Still other constructions were recalled correctly some of the time, while at other times subjects substituted the Standard English form of the construction. (This was especially true of present and past tense markers, articles, plural markers, and prepositions). It is suggested that in addition to a number of relatively invariant non-standard constructions (invariant for a given geographical location), Deaf English possesses variable rules. Another way of stating the case would be to say that the deaf have learned many obligatory Standard English grammatical and morphological rules, but they apply them optionally. An investigation of contextual or sociolinguistic factors which may condition these variable rules would be valuable.

The real "Deaf English" is probably fairly complex, more complex than most pidgins. It can, however, be considered an instance of a pidginization process. A longitudinal study of the acquisition of Deaf

BEST COPY AVAILABLE

English would provide insight into this process. It would be interesting to investigate the effects of different educational methods upon the resultant variety of (Deaf) English. It is very possible that such phenomena as omission of articles and past tense markers have nothing to do with interference from American Sign Language, but are simply redundant, non-essential features of English that are difficult to learn and easy to overlook.

The handicap of profound prelingual deafness has created a linguistic minority. Psycholinguistic investigations of deaf persons' (gestural) language competence and of their (societal) language problems can be of great value to psycholinguists, educators of the deaf, and to the deaf themselves.

BIBLIOGRAPHY

BEST COPY AVAILABLE

Battison, R., (1971) "Some observations on sign languages, semantics, and aphasia". University of California, San Diego, unpublished.

Bellugi, U., (1970) "The signs of language and the language of signs". Unpublished paper presented at Stanford University Psychology Colloquium.

Bellugi, U., and Siple, P., (1971) "Remembering with and without words". Paper presented at the International Colloquium CNRS, Current Problems in Psycholinguistics, Paris.

Boatner, E.B., (1965) "The need of a realistic approach to the education of the deaf". Proc. Joint Convent. Calif. Ass. Parents of Deaf and Hard of Hearing Children, Calif. Ass. Teachers of Deaf and Hard of Hearing, and Calif.Ass.Deaf, Los Angeles.

Charrow, V.R., and Fletcher, J.D., (1974) "English as the second language of deaf children". Develop. Psychol., 5:463-470.

Dunagan, W.L., (1969) "A comparison of written language skills of deaf children and normal-hearing children who have achieved similar reading level". Unpublished thesis, University of Tennessee, Knoxville.

Fischer, S., (1973) "Verbs in American Sign Language". Salk Institute, San Diego, unpublished.

Furth, H. G., (1966) Thinking Without language: Psychological Implications of Deafness. Free Press, New York.

BEST COPY AVAILABLE

Furth, H.G., (1971) "Linguistic deficiency and thinking : research with deaf subjects 1964-1969". Psychol. Bull 74:58-72.

Goetzinger, C.P., and Rousey, C.L., (1959) "Educational achievement of deaf children". Amer. Ann. Deaf, 104: 221-231.

Hoemann, H. (1972) "The development of communication skills in deaf and hearing children". Child Devel. 43: 990-1003.

McClure, W.J., (1966) "Current problems and trends in the education of the deaf". Deaf Amer. 18:8-14.

Miller, J., (1958) "Academic achievement". Volta Review, 60:302-304.

Myklebust, H.R., (1964) The Psychology of Deafness, 2nd. ed., Grune and Stratton, New York.

Quigley, S.P., Smith,N., and Wilbur, R. (1974) "Comprehension of relativized sentences by deaf students". Journal of Speech and Hearing Research, (in press).

Schulze, G., (1965) "An evaluation of vocabulary development by thirty-two deaf children over a three year period". Amer. Ann. Deaf 110:424-435.

Stokoe, W.C., Jr., (1971) The Study of Sign Language, National Association of the Deaf, Silver Spring , Maryland.

Stokoe, W.C., Jr., (1972) Semiotics and Human Sign Language , Mouton, The Hague.

Tervoort, B., and Verbeck,A., (1967) "Analysis of communicative structure patterns in deaf children". VRA Project RD-467-64-65, National Technical Information Service, PB - 205840.

BEST COPY AVAILABLE

Vanderwoude, K.W., (1970) "Problem solving and language". Archives of General Psychiatry, 23:337-342.

Woodward, J.C.,Jr. (1973) "Some characteristics of pidgin sign English". Sign Language Studies, 3:39-46.

Youniss, J., Furth, H.G., and Ross, B. (1971) "Logical symbol use in deaf and hearing children and adolescents". Devel. Psych. 5:511-517.

TABLE 7

BEST COPY AVAILABLE

Multivariate Analysis of Variance, Overall Sentence Errors,

SE and DE Sentences

Source of Variance		df	F-statistic
SE Sentences			
Perfect Sentence:	N vs. All Deaf	1,21	21.8**
	DH vs. DD	1,21	1.8
Omitted Sentence:	N vs. All Deaf	1,21	4.4
	DH vs. DD	1,21	0.5
Erroneous Sentence:	N vs. All Deaf	1,21	38.7***
	DH vs. DD	1,21	1.5
DE Sentences			
Perfect Sentence:	N vs. All Deaf	1,21	0.0
	DH vs. DD	1,21	0.2
Omitted Sentence:	N vs. All Deaf	1,21	12.5*
	DH vs. DD	1,21	0.1
Erroneous Sentence:	N vs. All Deaf	1,21	4.8
	DH vs. DD	1,21	0.1

* $p < .05$

** $p < .01$

*** $p < .001$

TABLE 11

BEST COPY AVAILABLE

DE--Error Intensity 4 ("Corrections") vs.
Error Intensity 5 ("Deafisms") for
Normal, DH and DD Groups

Part of Speech	F-statistic Normals	DH	DD
Present tense marker	6.1	8.8	7.9
Past tense marker	23.9**	19.8**	17.1*
Copula	8.4	8.6	8.2
Preposition	35.9***	3.3	7.3
Present participle	3.3	0.4	0.0
Past participle	26.2**	0.3	0.8
Definite article	3.1	0.9	2.5
Indefinite article	27.6**	27.3**	29.1**
Plural	11.5~	24.9**	13.7*

~ marginal
* $p < .05$
** $p < .01$
*** $p < .001$

(df in all cases = 1, 21)

TABLE 14

Means and Standard Deviations for Each Group for Percentages of Errors in 11 Parts of Speech in SE and 9 Parts of Speech in DE-Intensity 4

BEST COPY AVAILABLE

Source of Variance		Normals		DH		DD	
Part of Speech.	Subtest	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Present tense marker	SE	5	5	12	6	11	6
	DE-4	16	16	25	12.5	20	16
Past tense marker	SE	4	4	17	8.5	13	11
	DE-4	20	7	24	16	27	6
Copula	SE	1	2	15	12	16	11
	DE-4	19	15	23	14	23	20
Preposition	SE	4	3	17	7	16	8
	DE-4	32	16	21	9	23	11
Present participle	SE	3	6	21	20	35	37
	DE-4	6	14	12	11	11	11
Past participle	SE	3	6	21	15	29	25
	DE-4	42	31	10	11	6	10
Definite article	SE	5	9	34	20	31	39
	DE-4	7	10	8	8	12	9
Indefinite article	SE	4	4	20	8	12	6
	DE-4	21	14	32	11	27	14
Plural	SE	1	4	20	10	20	17
	DE-4	23	19	36	15	36	16
Mass	SE	0	0	25	12	14	15
Future	SE	0	0	6	12	4	9

N.B. - Underlined items are those in which the Mean is equal to approximately 2 or more times the SD--i.e., items with a reasonable amount of variability.

APPENDIX A

Listing of Test Items

BEST COPY AVAILABLE

Deaf English Sentences

1. John like to Alice but John will can't play with Alice.
2. Yesterday Jack go to home because Jack sore his toe.
3. Yesterday I say my teacher I am sorry late.
4. She think so she not smart to pass test.
5. Many people dance but I not brave to dance.
6. Yesterday I sat my chair and I write letter you.
7. Last night party my house full people.
8. Last Monday Ann came over my house and sleep my house.
9. We ate many livers beans and corns for dinner.
10. We play football long time and we enjoy very much.
11. Policeman say you show me where man.
12. Mother buyed many furnitures for our new house.
13. Yesterday I finish to do then I play ball.
14. I say my father I eat piece pie with ice cream.
15. That morning I brush my tooth and wear my clothes.
16. I am interesting to learn what did Lincoln say.
17. My brother name is Bill go to wrestle match yesterday.
18. Every day my family like go downtown to walk.
19. Girl young heared voice in her room.
20. I have hose and I give water to grass grow up.
21. We have ten families that they live my street.
22. I think all rabbit is soft alike pillow.
23. Today Ann meet man that he write many book.

24. My brother young stay very close my mother.

BEST COPY AVAILABLE

25. My house painting brown and white and with red roof.

26. My front of house has large lawn and few tree.

27. The living room will put new rug soon.

28. Yesterday dog black run follow boy little.

29. Our team game play tomorrow in Oakland.

30. Rabbit too cute because rabbit baby.

31. I finish eat many rice and I full rice.

32. Tom will can't play ball because Tom sore his hand.

33. Mary like to me so Mary send letter me.

34. Yesterday I drive car but my brother sit chair all day.

35. Many girl pretty live my street now.

36. I am interesting to read about Indian people.

37. Jane say she have three brother and no sister

38. Last Thursday Ed fight Dick and Dick run home.

39. I finish eat breakfast and I go school.

40. My house not modern like other house.

41. Mike very sad about break his arm.

42. Jim got scare because dog bited him.

43. I know boy that he look alike my brother.

44. I have a lot of learn from my teacher.

45. Father and mother say you tell us where dog.

46. New teacher ask me what my name.

47. Next week our back yard will plant five tree.

48. Last night my father feed my baby sister.

49. I go the beach and get many sands in my shoe.

50. Today mother floor wash and father car clean.

BEST COPY AVAILABLE

51. John likes Alice but John won't be able to play with Alice
52. Yesterday Jack went home because he had a sore toe.
53. Yesterday I told my teacher I was sorry I was late.
54. She thinks she is not smart enough to pass the test.
55. Many people danced but I was not brave enough to dance.
56. Yesterday I sat in my chair and wrote you a letter.
57. At last night's party my house was full of people.
58. Last Monday Ann came over to my house and slept at my house.
59. We ate a lot of liver, beans and corn for dinner.
60. We played football a long time and we enjoyed ourselves very much.
61. The policeman said show me where the man is.
62. Mother bought a lot of furniture for our new house.
63. Yesterday I finished what I was doing then I played ball.
64. I told my father I ate a piece of pie with ice cream.
65. That morning I brushed my teeth and put on my clothes.
66. I am interested in learning what Lincoln said.
67. My brother whose name is Bill went to a wrestling match yesterday.
68. Every day my family likes to go for a walk downtown.
69. A young girl heard a voice in her room.
70. I have a hose and I water the grass to make it grow.
71. There are ten families living on my street.
72. I think all rabbits are as soft as pillows.
73. Today Ann met a man who wrote many books.
74. My younger brother stays very close to my mother.
75. My house is painted brown and white and has a red roof.
76. There is a large lawn and a few trees in front of my house.

TABLE 14

BEST COPY AVAILABLE

Means and Standard Deviations for Each Group for Percentages of Errors in 11 Parts of Speech in SE and 9 Parts of Speech in DE-Intensity 4

Source of Variance		Normals		DH		DD	
Part of Speech	Subtest	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Present tense marker	SE	5	5	12	6	11	6
	DE-4	16	16	25	12.5	20	16
Past tense marker	SE	4	4	17	8.5	13	11
	DE-4	20	7	24	16	27	6
Copula	SE	1	2	15	12	16	11
	DE-4	19	15	23	14	23	20
Preposition	SE	4	3	17	7	16	8
	DE-4	32	16	21	9	23	11
Present participle	SE	3	6	21	20	35	37
	DE-4	6	14	12	11	11	11
Past participle	SE	3	6	21	15	29	25
	DE-4	42	31	10	11	6	10
Definite article	SE	5	9	34	20	31	39
	DE-4	7	10	8	8	12	9
Indefinite article	SE	4	4	20	8	12	6
	DE-4	21	14	32	11	27	14
Plural	SE	1	4	20	10	20	17
	DE-4	23	19	36	15	36	16
Mass	SE	0	0	25	12	14	15
Future	SE	0	0	6	12	4	9

N.B. - Underlined items are those in which the Mean is equal to approximately 2 or more times the SD--i.e., items with a reasonable amount of variability.

APPENDIX A

Listing of Test Items

BEST COPY AVAILABLE

Deaf English Sentences

1. John like to Alice but John will can't play with Alice.
2. Yesterday Jack go to home because Jack sore his toe.
3. Yesterday I say my teacher I am sorry late.
4. She think so she not smart to pass test.
5. Many people dance but I not brave to dance.
6. Yesterday I sat my chair and I write letter you.
7. Last night party my house full people.
8. Last Monday Ann came over my house and sleep my house.
9. We ate many livers beans and corns for dinner.
10. We play football long time and we enjoy very much.
11. Policeman say you show me where man.
12. Mother buyed many furnitures for our new house.
13. Yesterday I finish to do then I play ball.
14. I say my father I eat piece pie with ice cream.
15. That morning I brush my tooth and wear my clothes.
16. I am interesting to learn what did Lincoln say.
17. My brother name is Bill go to wrestle match yesterday.
18. Every day my family like go downtown to walk.
19. Girl young heared voice in her room.
20. I have hose and I give water to grass grow up.
21. We have ten families that they live my street.
22. I think all rabbit is soft alike pillow.
23. Today Ann meet man that he write many book.

BEST COPY AVAILABLE

24. My brother young stay very close my mother.

25. My house painting brown and white and with red roof.

26. My front of house has large lawn and few tree.

27. The living room will put new rug soon.

28. Yesterday dog black run follow boy little.

29. Our team game play tomorrow in Oakland.

30. Rabbit too cute because rabbit baby.

31. I finish eat many rice and I full rice.

32. Tom will can't play ball because Tom sore his hand.

33. Mary like to me so Mary send letter me.

34. Yesterday I drive car but my brother sit chair all day.

35. Many girl pretty live my street now.

36. I am interesting to read about Indian people.

37. Jane say she have three brother and no sister.

38. Last Thursday Ed fight Dick and Dick run home.

39. I finish eat breakfast and I go school.

40. My house not modern like other house.

41. Mike very sad about break his arm.

42. Jim got scare because dog bited him.

43. I know boy that he look alike my brother.

44. I have a lot of learn from my teacher.

45. Father and mother say you tell us where dog.

46. New teacher ask me what my name.

47. Next week our back yard will plant five tree.

48. Last night my father feed my baby sister.

49. I go the beach and get many sands in my shoe.

50. Today mother floor wash and father car clean.

BEST COPY AVAILABLE

51. John likes Alice but John won't be able to play with Alice
52. Yesterday Jack went home because he had a sore toe.
53. Yesterday I told my teacher I was sorry I was late.
54. She thinks she is not smart enough to pass the test.
55. Many people danced but I was not brave enough to dance.
56. Yesterday I sat in my chair and wrote you a letter.
57. At last night's party my house was full of people.
58. Last Monday Ann came over to my house and slept at my house.
59. We ate a lot of liver, beans and corn for dinner.
60. We played football a long time and we enjoyed ourselves very much.
61. The policeman said show me where the man is.
62. Mother bought a lot of furniture for our new house.
63. Yesterday I finished what I was doing then I played ball.
64. I told my father I ate a piece of pie with ice cream.
65. That morning I brushed my teeth and put on my clothes.
66. I am interested in learning what Lincoln said.
67. My brother whose name is Bill went to a wrestling match yesterday.
68. Every day my family likes to go for a walk downtown.
69. A young girl heard a voice in her room.
70. I have a hose and I water the grass to make it grow.
71. There are ten families living on my street.
72. I think all rabbits are as soft as pillows.
73. Today Ann met a man who wrote many books.
74. My younger brother stays very close to my mother.
75. My house is painted brown and white and has a red roof.
76. There is a large lawn and a few trees in front of my house.

BEST COPY AVAILABLE

77. A new rug will be put in the living room soon.

78. Yesterday a black dog ran after a little boy.

79. Our team plays a game tomorrow in Oakland.

80. The rabbit is very cute because it is a baby.

81. I have eaten a lot of rice and I am full of rice.

82. Tom won't be able to play ball because his hand hurts.

83. Mary likes me so she sent me a letter.

84. Yesterday I drove a car but my brother sat in a chair all day.

85. Many pretty girls live on my street now.

86. I am interested in reading about Indian people.

87. Jane says she has three brothers and no sisters.

88. Last Thursday Ed fought Dick and Dick ran home.

89. I finish eating breakfast and I go to school.

90. My house is not as modern as other houses.

91. Mike is very sad about breaking his arm.

92. Jim got scared because a dog bit him.

93. I know a boy who looks like my brother.

94. I have learned a lot from my teacher.

95. Father and mother said tell us where the dog is.

96. The new teacher asked me what my name was.

97. Next week five trees will be planted in our back yard.

98. Last night my baby sister was fed by my father.

99. I went to the beach and got a lot of sand in my shoes.

100. Today mother washes the floor and father cleans the car.